

## ABSTRACT

A method and apparatus for efficient data transmission in a wireless voice-over-data communication system. In a transmitter, data segments are transmitted in accordance with a predefined data protocol. The predefined data protocol is modified to define a first segment size and a second segment size. The first segment size represents a minimum segment size that can be transmitted. The second segment size represents a maximum segment size that can be transmitted. A segment is created and transmitted whenever a quantity of time-sensitive information available for transmission allows a segment to be constructed having a segment size between the minimum segment size and the maximum segment size. A segment of any size up to the maximum segment size is also created and transmitted whenever any time-sensitive information is available for transmission and an acknowledgement message is received by the transmitter.